World Heritage Monuments Management Planning in the light of UN Sustainable Development Goals: The case of the Old Town of Corfu

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Abstract

This paper focuses on the topic of world heritage monuments tourism planning and more specifically at the area of strategic management design, as the integration of the 17 United Nations Sustainable Development Goals "SDGs", described in the Agenda 2030 introduces a wide range of conditions that affect the policy design. With the introduction of Sustainable Goal 11, countries have pledged to "make cities and human settlements inclusive, safe, resilient and sustainable". Within this goal, Target 11.4 aims to "strengthen efforts to protect and safeguard the world's cultural and natural heritage".

The main goal of our research is to determine whether a tourism promotion methodology, experientially used in the case of the Old Town of Corfu, may assist in the monitoring of the existing management plan of the site, providing with data and metrics that allow its adaptation according to the 17 SDGs. Our proposed methodology has been applied within the "Hologrammatic Corfu" project, a digital tourist guide designed specifially to enable exploration of the site covering user requirements before, during and after the trip, with the use of transmedia content such as photos, 360-degree videos, augmented reality and hologrammatic videos. Here data collected regarding the travellers' visits to specific points of interest are actively utilized for dynamic re-rooting during their visit, safeguarding sustainability and accessibility along the entire tourism cycle.

1. Introduction

World heritage (tangible and intangible) has been for a long time the subject of research and discussion, especially in terms of content, concepts and the driving forces behind its management (Fredholm, 2015). Sustainable management of world heritage and especially world cultural heritage presupposes the clear application of specific procedures for its economic, social and environmental sustainability (Nocca, 2017), creating the necessary management dimensions. In this framework, it is essential that the design and planning of world heritage management plans is as a top priority for heritage managers, in order to ensure and preserve the Outstanding Universal Value of a World Heritage Monument. The complexity of a monument (Pendlebury et al, 2009) along with the multiple factors, actors and institutions involved in its management (Hirsenberger al, 2019; Seyfi et al, 2019; Ringbeck, 2017) make the procedure more challenging and multi parametric. Especially in the cases of monuments that are historic centres, these

procedures becomes even complexier as the sustainable management of the monument depends not on one but on all the factors described above. The large number of differantiated users of the monument with their individual needs, combined with the increased tourism flow caused by the characterisation of a monument as world heritage site affect the monument and its management even more. The international developments in terms of new technologies and management priorities create a greater need for a regular updating of management plans, and systematic evaluation of the described objectives and proposed actions, so that the management of the monument can be carried out in a timely manner and can ensure, at least in terms of design, the desired sustainability for a long time. A detailed, thorough and flexible management process is therefore needed in order to create stronger commitments on the part of heritage managers to protect the monuments in perpetuity as well as greater prospects for preserving their values for future generations.

2. Sustainable Management of World Heritage Sites-CORRELATE

2.1 The Outstanding Universal Value of a World Heritage Site

World Heritage Sites include a wide range of cultural entities (archaeological sites, buildings, urban complexes, historical cities, industrial heritage, etc.) and represent a large part of human activity. The basis of their nomination and inscription on UNESCO's World Heritage List is the display of Outstanding Universal Value (OUV), which according to UNESCO (2019)"……… *means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole*". The Statement of OUV lies also on the management procedures and plans for every World Heritage Site. During the research, the integrated planning and implementation of actions aimed at the protection, preservation and promotion of world heritage Sites was highlighted but also the achievement of goals related to their sustainability. The structure of management plans usually follow already established managerial models, such as: the description of a monument and its importance, the existance of a specific legislative, administrative and procedural framework, the creation of a management infrastructure, the formation of local managers' visions and goals for a Site. The degree of their complexity also relatively affects the complexity of the management. As each case of is unique, the management requirements differ and it is particularly important that the processes involved in the formation of the management have objectivity and are commonly accepted by the majority of the actors involved in the management procedure. As a result of the plurality of actors and parameters involed cross-sectoral cooperation in order to achieve not only promotion and protection, but mainly sustainable development.

2.2 The 17 UN Sustainable Development Goals and the local goals

On 25 September 2015, in the framework of the 70th General Assembly of the United Nations, the Agenda for Sustainable Development (Agenda 2030) was adopted along with the related 17 Sustainable Development Goals (SDGs) and their 169 targets. The SDGs have an initial implementation schedule until 2030 and they consist of a general model of implementation worldwide, as they create commitments for every country, regardless of their level of development, policies and priorities. Agenda 2030 promotes the integration of all three dimensions of sustainable development - social, environmental and economic - into all sectoral policies and at the same time promotes the interconnection and coherence of the SDGs with related policies and legislative frameworks. Goal 11 "Sustainable Cities and Communities" includes the target 11.4. " Strengthen efforts to protect and safeguard the world's cultural and natural heritage" which is the only one of the 169 targets directly and inextricably linked to the protection of the world heritage. The connection of the 17 SDGs with world heritage is not however limited to the delimitation of an exclusive target as there are a number of management issues of the world heritage sites that are related to other SDGs and targets. In the case of historic centres, the satisfaction of many of the SDGs (eg. affordable housing options, building restoration, urbanization, energy management issues) is fundamental as they relate to important functional requirements of the monument as a whole. In addition to theoretical assessments of the changing terminology about culture (ranging from cultural property, tangible and intangible cultural heritage, cultural goods or products), the role of culture in society is constantly being redefined through its connection to other areas of knowledge and learning:

from the development of the cultural economy to the interest in the creative industries and the recent debate on the role of culture in sustainable development (Sabatini, 2019).

Figure 1 The UN 17 Sustainable Goals (UN, 2020)

2.3 Local goals and CORRELATE Framework

In view of the above, it is obvious that the evolution of the process of design and implementation of the management plans for World Heritage Sites requires redesign and reorganization in order to cover the current developments in terms of sustainability but also in order to cope with the unpredictable parameters that may affect sustainability. This process could be achieved by adopting a new framework that does not abandon the traditional and historically accepted methodologies for designing, monitoring, evaluating and reviewing management plans. The proposed framework that is called **CORRELATE** (**interaCtive framewORk foR sustainablE worLd heritAge siTe managEment)** evolves this process by introducing the SDGS as building blocks for evaluating the successful implementation of local goals at monument level. This framework is being introduced for the first time and defines the relationships between the factors and parameters involved in achieving the strategic objectives of both the UNESCO World Heritage Center and the designated Sites, covering the need for implementation of the conditions set by the 17 (today) SDGs. Its innovation is based on the manner that different actors interact, through the introduction of a new process of redefining needs by systematically investigating the effectiveness of the local objectives. Those local objectives are evaluated in relation to the most relevant SDGs so that each proposed action of a management plan fulfills the maximum of requirements of sustainability. CORRELATE uses a management procedure that results in understanding whether the objectives and actions proposed by local managers effectively solve the identified problems without creating new ones and introduces the necessary amendments that need to be included in management plans for the sustainability of the momunents according to UN Goals. Figure 2 shows schematically this top-down approach: In order to ensure and preserve the Outstanding Universal Value of a World Heritage Site (Khalif, 2019; UNESCO, 2020) (1st Level), the management of local objectives as described in the Monument's Management Plan (3rd Level) should be evaluated according to the 17 UN Sustainable Development Goals (Level 2). This means that the 3rd Level is implemented according to the requirements of the 2nd Level, in order to achieve the 1st Level. In the context of CORRELATE, the primary goal of management plans is the protection of all those elements related to the preservation of the Outstanding Universal Value of the Monument and for this reason it is placed at the top of the figure as it is not subject to revision or adjustment in any case.

Figure 2 The top-down approach of CORRELATE

In the middle of the figure the 17 SDGs are placed as the basic level of evaluation and classification for the local goals which are placed at the bottom of the figure. For each monument the implementation of each local goal must be first evaluated according to the SDGs so that the higher goal can be achieved and the sustainability of the monument can be ensured. The achievement of this goal is inextricably linked to the satisfaction of every individual goal, as they are reflected in the case-appropriate management plans and they must be reviewed and updated accordingly with current circumstances and developments. The use of in the context of cultural management of world heritage monuments uses their structural characteristics and the completeness of the categorization they offer, covering every aspect and condition for prosperity and improvement of the quality of life as well as measurable indicators for each goal which are described in their sub-objectives (Labadi, 2019).

The most important contribution of this proposed framework is that it places cultural heritage at the heart of sustainability. The use of the framework can compose a different solution every time, depending on the specifics of each monument and by utilizing the interconnected relationships between the different SDGs that may not seem to be related at first glance.

3. Transmedia Content as "preservator" of cultural heritage

Sustainable management of World Heritage Sites also involves tourism management, especially cultural and creative tourism and by focusing on activities that relate to the memory and identity of local communities (Ferreira et al, 2019). The corelation between visitors and local experiences in enhanced by the perspective of transmedia storytelling as part of marketing strategies that reinforce the value of destinations and as a key element in the construction of the World Heritage Sites brand (Campillo-Alhama et al, 2019).

Transmedia means "across media" and describes any combination of narrative and non-narrative media elements that are spread systematically across multiple platforms. Examples of "narrative elements include plot, setting, and characters, while non-narrative elements tend to be modes of participation in an online community or types of actions in a video game or design features such as menu structure in an e-book or instructional design in an in-person activity" (Herr-Stephenson et al., 2013). Although the term "transmedia" was coined by media researcher Marsha Kinder in 1991 (as cited in Jenkins, 2015), the concept was first used in the artistic field in the 60s in the United States (Scolari, 2019). The most significant conceptual contribution to transmedia was created by Jenkins and his successful suggestion for using the term "transmedia storytelling" (Jenkins, 2003; Scolari, 2019). Humans have the capability to tell stories using a variety of tools. Even though transmedia is at the heart of modern storytelling and creativity, however, there is evidence that the notion of transmedia has its roots in ancient Greece. An equivalent term

"ekphrasis" (in Greek, ekphrasis means expression) was used to describe skills that could simultaneously convey an artistic content or a mythological narrative in different forms, such as painting, sculpture, drama, oral poetry, writing, dance, performance, art in pottery, etc. (López-Varela Azcárate, 2015).

In a digital world, transmedia comprises analogue or digital media, e.g. images, photos, text, video clips, audio narration, music, animation, comic books, games and their combination (Robin & McNeil, 2012). With ever-evolving technology, transmedia storytelling embraces cutting-edge technologies, for instance, 360-degree interactive videos, virtual and augmented reality and holograms. These modern technology platforms showcase analogue and digital content that can flow both individually, i.e., through a medium and in combination. Figure 3 shows Pratten's transition from the old to the new world of transmedia (Figure 1) (Pratten, 2011).
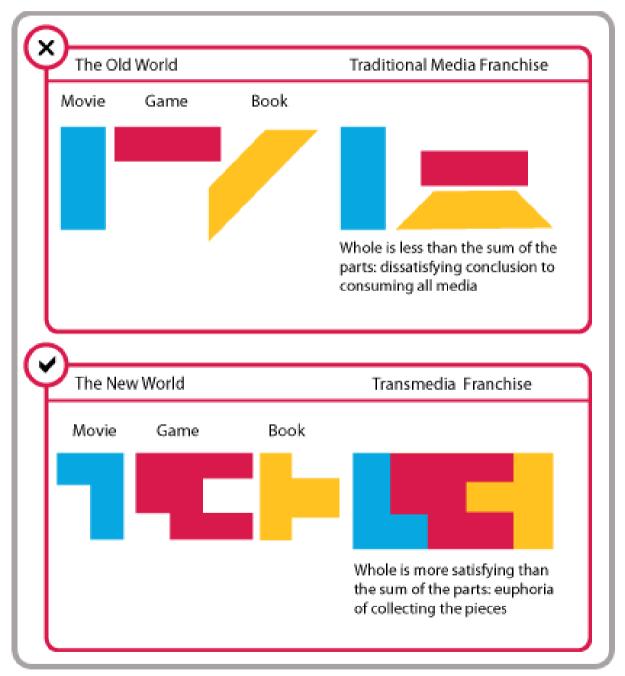

Figure 3 What is Transmedia? source: Pratten (2011, p. 2)

Alongside, the content of cutting-edge technology media is not distributed exclusively by industry but spreads through consumers which shape, share, reshape and mix multimedia content using the multiple benefits of networked communication platform (Gordon & Lim, 2016). Typical examples of such content are museums exhibits, archaeological sites, city monuments and libraries. Digital material could be the trigger of transforming an ordinary

traveller to a cultural heritage content creator (Kaimara et al., 2020). By providing content to an already existing point of interest, travellers who are initially consumers of the tourism product become producers and therefore acquire a dual role and are now called "prosumers". This process, that is, traveller's engagement with the content, promotes incidental learning, that was not intentional and planned in the first place (Poulimenou, Kaimara, Papadopoulou, et al., 2018). An unplanned learning process is a type of informal learning based on constructive theories and especially on activity theory (Deliyannis, 2012). In general, in the first, learning arises from learners' (travellers) participation, and in the second emphasis is given to changing nature of the objects by travellers. Simply put, people interact with tools designed and developed by other people, create news, decide to become active constructors of their knowledge, and they share the content they have created. This possibility called "participatory culture" is due to the human instinct to share and suggest content (Gordon & Lim, 2016). The advent of technology innovation has given to travellers more possibilities by providing expression opportunities on websites, social media platforms, and media sharing services. Forms of participatory culture include affiliations i.e. memberships, formal and informal, in online communities, expressions, i.e. producing new creative forms, collaborative problem-solving, i.e. working together in teams to develop new knowledge and circulations, i.e. shaping the flow of media (Jenkins et al., 2009). In this participatory culture, prosumers become hunters and gatherers by collecting information from multiple sources to create a new synthesis. Transmedia navigation represents the traveller's ability to meet the same information, same stories, same characters and worlds across multiple modes of representation. Besides, through transmedia storytelling, travellers understand that the stories could be continued and expanded by themselves and/or changed and not just presented on different platforms (Fiorelli, 2013). Travellers, through this transmedia participatory process, experience pleasure by providing a micro-narrative piece to a larger macro-narrative, that is the full story (Basaraba et al., 2019).

The most common digital applications for cultural heritage promotion are found in museums, where the first attempts were made (e.g., audio guides and digital displays). However, a visitor who is familiar with interacting with the environment and remote users is no longer motivated by these applications. New technologies that support transmedia content offer an interactive experience through various digital devices available to visitors. Primarily, several media will soon be inaccessible, as compatible devices will cease to be available. Thus, the only possibility of preserving cultural heritage is data transfer from the oldest to the most modern storage device and systems (Kraemer & Kanter, 2014). 3D printing, virtual, augmented or mixed reality, virtual guides, animated picture albums, digitized exhibits and collections, hologrammatic videos and augmented reality applications are a few examples that have been utilised in art history classes, museums, archives, and libraries (Kraemer & Kanter, 2014; Poulimenou, Kaimara, & Deliyannis, 2018).

Museums, as typical educational places, which are designed on the principles of constructivist theories are dynamic. Through new forms of interactive communication, such as transmedia, augmented reality and hologrammatic videos, museums have the potential to be important transmitters of cultural heritage. Smartphone-tablet applications based on augmented reality technology allow visitors to target an exhibit, a photo or a QR code and then additional information are displayed. Visitors also could add their own information. Augmented reality technology relies on transmedia storytelling, by reusing the collected data and expanding the information (Kraemer & Kanter, 2014). However, these possibilities are not limited to the narrow confines of a museum. Technology turns every smart city into a living museum.

4. The Project "Hologrammatic Corfu"

"Hologrammatic Corfu" is an on going european project, co-funded by the Operational Program "Ionian Islands 2014-2020" and the European Union, which applies cutting edge technologies for the promotion and sustainable management of the touristic flow in the Old Town of Corfu, a World Heritage Monument inscribed on UNESCO's List from 2007. The project attempts to address a deficit gap in the flow of touristic information by creating a system of dynamic, personalized digital tours for the visitors of the monument. The created system presents basic information about the monument for all visitors regardless of the level of acquaintance they wish to experience. The use of the system allows the visitor to receive interactively reliable and verified information for several points of interest, in the form of augmented reality, holograms and interactive 360º video. Through the placement of the most important points of interest on a map, it is possible to design, create and propose innovative interactive narrative tours intended for

different user categories. The transmedia content modeling methodology presented within this work describes the process used to create an easy-to-use application that include locating historical-tourist points of interest, providing multimedia content and using augmentation, while allowing the visitor to be informed about the availability of points of interest in order to plan or dynamically alter their visiting experience, where data dynamically adapt to the current conditions prevailing in the tourist destination. Hence, typical content-delivery is replaced by active visitor management by enabling them to follow dynamic paths which adapt according to their interests, abilities and conditions of the visiting site, including congested areas where high-waiting time is detected. Hence distribution of the volume of visitors in alternative locations, is proposed as a method for the reduction of the anthropogenic burden and the adaptation of the tourist influx to the carrying capacity of the monument.
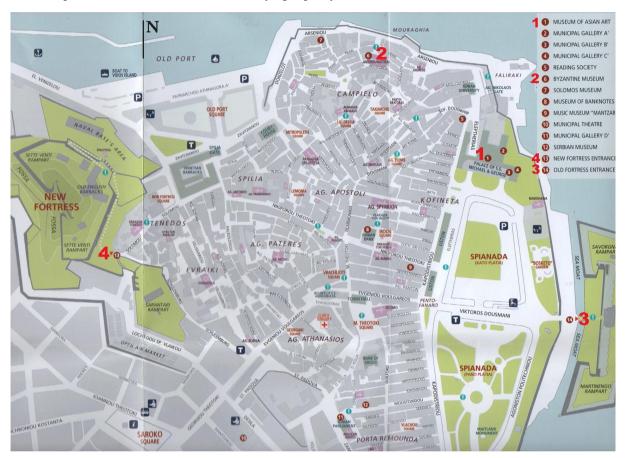

Figure 4: A map of the Old Town of Corfu showing several points of interest (Photo via http://xeee.web.auth.gr/ICA-Heritage/Corfu/Whattosee.html)

The implementation of the project, which is carried out by the Interactive Arts Laboratory of the Department of Arts, Sound and Vision of the Ionian University and by the Ephorate of Antiquities of Corfu. At first the system envisages the creation of an easy-to-use application that will offer services for locating points of historical-tourist interest, providing multimedia content. The application allows the visitor to be informed about the availability of points of interest and to voluntarily plan his own historical-cultural routes. As far as people with mobility issues is concerned, the system provides information about the accessibility of the points of interest and suggestions for alternative routes. The points of interest are documented with historical information and two different documentation texts were created, one with communicative character that includes brief information about each point of interest and a more extensive one, with reference to sources and bibliography addressed to those who wish access to further information.

Points of interest are displayed on a map (geolocation) with the ability to search for other nearby locations and show a suggested route. The points of interest that offer an interactive tour are highlighted. The content of the application beyond the important multimedia material of historical-tourist interest includes information about the structure, organization and operation of the city, such as store opening hours, local holidays and celebrations, important events, emergency telephones, accessibility, public spaces, parking, etc. This kind of information helps a visitor to acquire a

complete idea of the monument's cultural and operational details and to better plan their visit, avoiding choices that could lead to a deterioration of the experience.

The project also foresees the creation of holographic content shown at custon made pyramids. Four pyramid systems have been developed (one for the Region of Ionian Islands, one for the Municipality of Corfu and one for the Corfu Port Authority) in order to be used for the tourism promotion activities and one has been developed for Ionian University for further research. Visitors are also able to view the holographic content on their mobile devices if they have the appropriate equipment. Also small individual pyramids (100 pcs) have been procured to be distributed to users on a trial base for the evaluation of the project.

The main innovation of the project "Hologrammatic Corfu" lies on the technological tools that it uses (360° video-augmented reality - holograms) for the presentation, dissemination, and transfer of cultural information. At technological level, the combination of interactive storytelling with the use of multimedia and Geographic Information Systems (GIS) technologies, Augmented Reality (AR) technologies and mobile devices is an innovative endeavour as it combines modern and multi-sensory technologies, adaptive to the needs of users. In the case of the Old Town of Corfu, this kind of technology has only been implemented in specific cultural sites and has not been applied at any level of tourism promotion as an overall application.

5. Conclusions

World Heritage Sites management is a multiparametric problem with multiple extensions, as it is called upon to combine national and international legislation and procedures, to face different problems and challenges on a case-by-case basis, to connect different categories of users, while at the same time it is influenced and co-shaped by the data related to tourism development. The sustainability of World Heritage Sites is inextricably linked to their management methodology and management implementation requires the utilization cutting-edge technologies. Our research has shown that the already applied management methodologies do not sufficiently take into consideration the conditions for achieving sustainability goals, as defined and described by the Agenda 2030. On the other hand, Agenda 2030 and the 17 UN SDGs are a very recent development in the global community, therefore management plans that were formulated or updated before this development could not consider the directions of the SDGs. Thus, the elaboration of a framework that completed this managerial gap has been a challenge and necessity. As far as cultural information is concerned, it is obvious that transmedia stories are complex (combination of various media), immersive (advantages of cutting-edge technologies) and engaging (participatory culture). Cultural tourists require unique experiences that satisfy their interests (Basaraba et al., 2019). A cultural heritage system that employs transmedia content, presents local history, traditional myths, destroyed or even remote monuments. The power and contribution of each medium, depending on the content, to attract visitors, lead them to explore other aspects of the story and turn them into content creators, is the challenge when designing transmedia systems.

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